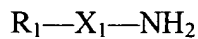


Claims

1. A method of processing a blood vessel, the method comprising preparing a blood vessel for implantation in a patient and exposing the blood vessel to a physiologically acceptable solution that comprises an exogenous substrate for an SSAO enzyme.

2. The method of claim 1 wherein the exogenous substrate has a chemical formula of



wherein  $R_1$  is chosen from a group consisting of H, OH,  $NH_2$ , and  $COOH$ , and

wherein

(a)  $X_1$  is an alkyl having between one and twelve carbons,

(b)  $X_1$  is a  $C_6$  aromatic ring, or

(c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl carbons.

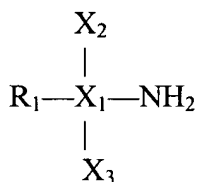
3. The method of claim 2 wherein  $X_1$  is  $CH_2$ .

4. The method of claim 3 wherein the exogenous substrate is present in the physiological solution at a concentration of between 0.01 and 100 millimolar.

5. The method of claim 3 wherein  $X_1$  is  $CH_2$ , and  $R_1$  is H, whereby the substrate has the formula  $CH_3NH_2$ .

6. The method of claim 2 wherein  $X_1$  comprises a  $C_6$  aromatic ring.
7. The method of claim 6 wherein  $R_1$  is H.
8. The method of claim 7 wherein the exogenous substrate is present in the solution at a concentration of between 0.01 and 100 millimolar.

9. The method of claim 1 wherein the exogenous substrate has a chemical formula of



wherein  $R_1$  is chosen from a group consisting of H, OH,  $NH_2$ , and COOH,  $X_2$  is chosen from a group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one and three carbons,  $X_3$  is chosen from a group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one and three carbons, and

wherein

- (a)  $X_1$  is an alkyl having between one and twelve carbons,
- (b)  $X_1$  is a  $C_6$  aromatic ring, or
- (c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl carbons.

10. The method of claim 9 wherein the exogenous substrate is present in the solution at a concentration of between 0.01 and 100 millimolar.

11. The method of claim 9 wherein the exogenous substrate is present in the solution at a concentration of between 0.1 and 10 millimolar.

12. The method of claim 1 wherein the physiological solution comprises a buffer having an Osmolarity in the range of about 280 to about 350 milliOsmolar that buffers the solution to maintain a pH in a range of about 7.0 to about 7.8.

13. A composition comprising an in vitro blood vessel, a physiologically acceptable solution that comprises an exogenous buffer that provides a physiological pH, and a concentration of an exogenous substrate for an SSAO enzyme, wherein the concentration of the exogenous substrate is at least great enough to relax the blood vessel exposed to the solution.

14. The composition of claim 13 wherein the exogenous substrate has a chemical formula of  $R_1-X_1-NH_2$

wherein  $R_1$  is chosen from a group consisting of H, OH,  $NH_2$ , and  $COOH$ , and

wherein

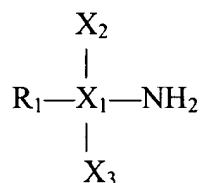
(a)  $X_1$  is an alkyl having between one and twelve carbons,

(b)  $X_1$  is a  $C_6$  aromatic ring, or

(c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl carbons.

15. The composition of claim 14 wherein  $X_1$  is  $CH_2$ .

16. The composition of claim 14 wherein the exogenous substrate is present in the physiological solution at a concentration of between 0.01 and 100 millimolar.
17. The composition of claim 14 wherein  $X_1$  is  $CH_2$ , and  $R_1$  is H, whereby the substrate has the formula  $CH_3NH_2$ .
18. The composition of claim 14 wherein  $X_1$  comprises a  $C_6$  aromatic ring.
19. The composition of claim 18 wherein  $R_1$  is H.
20. The composition of claim 19 wherein the exogenous substrate is present in the solution at a concentration of between 0.01 and 100 millimolar.
21. The composition of 14 wherein the exogenous substrate is present in the solution at a concentration of between 0.01 and 100 millimolar.
22. The composition of claim 14 wherein the exogenous substrate has a chemical formula of



wherein  $R_1$  is chosen from a group consisting of H, OH,  $NH_2$ , and COOH,  $X_2$  is chosen from a group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one

and three carbons,  $X_3$  is chosen from a group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one and three carbons, and

wherein

- (a)  $X_1$  is an alkyl having between one and twelve carbons,
- (b)  $X_1$  is a  $C_6$  aromatic ring, or
- (c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl Carbons.

23. A medicament comprising a purified exogenous substrate for an SSAO enzyme and a pharmaceutical carrier.

24. A method of using a medicament, the method comprising administering the medicament of claim 23 to a patient.

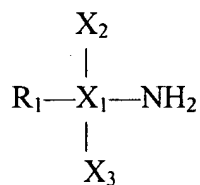
25. The medicament of claim 23 wherein the exogenous substrate has a chemical formula of  $R_1-X_1-NH_2$

wherein  $R_1$  a member of a group consisting of H, OH,  $NH_2$ , and COOH, and

wherein

- (a)  $X_1$  is an alkyl having between one and twelve carbons,
- (b)  $X_1$  is a  $C_6$  aromatic ring, or
- (c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl carbons.

26. A method of using a medicament, the method comprising administering the medicament of claim 25 to a patient.
27. The medicament of claim 25 wherein  $X_1$  is  $CH_2$ .
28. The medicament of claim 25 wherein  $X_1$  is  $CH_2$ , and  $R_1$  is H, whereby the substrate has the formula  $CH_3NH_2$ .
29. The medicament of claim 25 wherein  $X_1$  comprises a  $C_6$  aromatic ring.
30. The medicament of claim 29 wherein  $R_1$  is H.
31. The medicament of claim 29 comprising between 1 and 10,000 milligrams of the exogenous substrate.
32. The medicament of claim 23 comprising between 1 and 10,000 milligrams of the exogenous substrate.
33. The medicament of claim 23 wherein the exogenous substrate has a chemical formula of



wherein R<sub>1</sub> is a member of a group consisting of H, OH, NH<sub>2</sub>, and COOH, X<sub>2</sub> is a member of the group consisting of H, OH, NH<sub>2</sub>, COOH, and alkyls having between one and three carbons, X<sub>3</sub> is a member of the group consisting of H, OH, NH<sub>2</sub>, COOH, and alkyls having between one and three carbons, and

wherein

- (a) X<sub>1</sub> is an alkyl having between one and twelve Carbons,
- (b) X<sub>1</sub> is a C<sub>6</sub> aromatic ring, or
- (c) X<sub>1</sub> comprises a single C<sub>6</sub> aromatic ring and further comprises between one and eleven alkyl Carbons.

34. The medicament of claim 33 comprising between 1 and 10,000 milligrams of the exogenous substrate.

35. A method of using the medicament of claim 33, the method comprising administering the medicament to a patient.

36. The medicament of claim 23 wherein the medicament comprises a member of a group consisting of a pill, a granule, tablet, capsule, suspension, suppository, pessary, lotion, solution, cream, ointment, dusting powder, powder, paste, foam, aerosol, mist, /atomizing solution, surgical glue, medical tape, and patch.

37. The medicament of claim 23 wherein the carrier comprises a member of a group consisting of a starch, cellulose, malt, gelatin, talc, oil, glycol, polyol, ester, agar, pharmaceutically-acceptable salt, pharmaceutically-acceptable acid, and pharmaceutically-acceptable base.

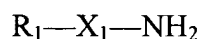
38. A method of using the medicament of claim 23, the method comprising administering the medicament to a patient.

39. A kit for treating a patient, the kit comprising the medicament of claim 23 and instructions for use of the medicament.

40. The kit of claim 39 wherein the instructions are a member of the group of instructions consisting of written, electronic, web-interactive, email, label, brochure, slide, and handout.

41. A method of treating a patient for high blood pressure, the method comprising administering to the patient a medicament comprising a purified exogenous substrate for an SSAO enzyme and a pharmaceutical carrier to thereby lower the blood pressure of the patient.

42. The method of claim 41 wherein the exogenous substrate has a chemical formula of

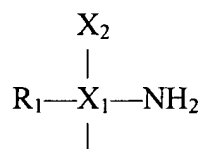


wherein  $R_1$  a member of a group consisting of H, OH,  $NH_2$ , and COOH, and

wherein



- (a)  $X_1$  is an alkyl having between one and twelve carbons,
  - (b)  $X_1$  is a  $C_6$  aromatic ring, or
  - (c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl carbons.
43. The method of claim 42 wherein  $X_1$  is  $CH_2$ .
44. The method of claim 42 wherein  $X_1$  is  $CH_2$ , and  $R_1$  is H, whereby the substrate has the formula  $CH_3NH_2$ .
45. The method of claim 42 wherein  $X_1$  comprises a  $C_6$  aromatic ring.
46. The method of claim 42 wherein  $R_1$  is H.
47. The method of claim 42 wherein the patient receives between 10-10,000 mg/kg of the exogenous substrate.
48. The method of claim 42 wherein the patient receives between 10-1,000 mg/kg of the exogenous substrate.
49. The method of claim 42 wherein the exogenous substrate has a chemical formula of



$X_3$

wherein  $R_1$  is a member of a group consisting of H, OH,  $NH_2$ , and COOH,  $X_2$  is a member of the group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one and three carbons,  $X_3$  is a member of the group consisting of H, OH,  $NH_2$ , COOH, and alkyls having between one and three carbons, and

wherein

- (a)  $X_1$  is an alkyl having between one and twelve Carbons,
- (b)  $X_1$  is a  $C_6$  aromatic ring, or
- (c)  $X_1$  comprises a single  $C_6$  aromatic ring and further comprises between one and eleven alkyl Carbons.

50. The method of claim 49 wherein the patient receives between 10-10,000 mg/kg of the exogenous substrate.

51. The method of claim 49 wherein the patient receives between 10-1,000 mg/kg of the exogenous substrate.

52. The method of claim 41 wherein the medicament comprises a member of a group consisting of a pill, a granule, tablet, capsule, suspension, suppository, pessary, lotion, solution, cream, ointment, dusting powder, powder, paste, foam, aerosol, mist, atomizing solution, surgical glue, medical tape, and patch.

53. The method of claim 41 wherein the carrier comprises a member of a group consisting of a starch, cellulose, malt, gelatin, talc, oil, glycol, polyol, ester, agar, pharmaceutically-acceptable salt, pharmaceutically-acceptable acid, and pharmaceutically-acceptable base.

54. A kit for treating a patient, the kit comprising instructions for use of a medicament in treating a patient for high blood pressure according to the method of claim 41.

55. The kit of claim 54 wherein the instructions are a member of the group of instructions consisting of written, electronic, web-interactive, email, label, brochure, slide, and handout.